



cholangiocarcinoma

Cholangiocarcinoma is a group of cancers that begin in the bile ducts. Bile ducts are branched tubes that connect the liver and gallbladder to the small intestine. They carry bile, which is a fluid that helps the body digest the fats in food. Bile is produced in the liver and stored in the gallbladder before being released in the small intestine after a person eats.

Cholangiocarcinoma is classified by its location in relation to the liver. Intrahepatic cholangiocarcinoma begins in the small bile ducts within the liver. This is the least common form of the disease, accounting for less than 10 percent of all cases. Perihilar cholangiocarcinoma (also known as a Klatskin tumor) begins in an area called the hilum, where two major bile ducts join and leave the liver. It is the most common form of the disease, accounting for more than half of all cases. The remaining cases are classified as distal cholangiocarcinomas, which begin in bile ducts outside the liver. The perihilar and distal forms of the disease, which both occur outside the liver, are sometimes grouped together and called extrahepatic cholangiocarcinoma.

The three types of cholangiocarcinoma do not usually cause any symptoms in their early stages, and this cancer is usually not diagnosed until it has already spread beyond the bile ducts to other tissues. Symptoms often result when bile ducts become blocked by the tumor. The most common symptom is jaundice, which is a yellowing of the skin and the whites of the eyes. Other symptoms can include itching, dark-colored urine, loss of appetite, unintentional weight loss, abdominal pain, and light-colored and greasy stools. These symptoms are described as "nonspecific" because they can be features of many different diseases.

Most people who develop cholangiocarcinoma are older than 65. Because this cancer is often not discovered until it has already spread, it can be challenging to treat effectively. Affected individuals can survive for several months to several years after diagnosis.

Frequency

Cholangiocarcinoma affects 2,000 to 3,000 people each year in the United States. This type of cancer occurs much more frequently in Southeast Asian countries such as Thailand, where it is related to infection with a parasite that is common there. For unknown reasons, cholangiocarcinoma occurs slightly more often in men than in women.

Genetic Changes

Cancers occur when a buildup of mutations in critical genes—those that control cell division, for example—allow cells to grow and divide uncontrollably to form a tumor. In most cases of cholangiocarcinoma, these genetic changes are acquired during a person's lifetime and are present only in bile duct cells that give rise to the tumor. The genetic changes, which are called somatic mutations, are not inherited. Somatic mutations in many different genes have been found in cholangiocarcinoma. Some of these genes act as tumor suppressors, which means they help keep the growth and division of cells tightly regulated. Mutations in or deletions of tumor suppressor genes can allow cells to grow and divide without control or order, which is a hallmark of cancer. Other genes associated with cholangiocarcinoma are classified as oncogenes; when they are turned on (activated) abnormally, these genes have the potential to cause normal cells to become cancerous. Identifying somatic mutations in cholangiocarcinoma may provide clues to how quickly the cancer will grow and spread, and which treatments might be most effective.

Researchers have also investigated inherited variations in several genes as possible risk factors for cholangiocarcinoma. These genetic changes, which are classified as germline mutations, are present in essentially all of the body's cells. However, no specific inherited changes have been found to be major risk factors for this disease.

Several non-genetic risk factors for cholangiocarcinoma have been identified. These include a bile duct disease called primary sclerosing cholangitis, bile duct stones or cysts, and exposure to certain chemical toxins used in manufacturing. In Southeast Asia, infection with parasitic worms that live in the human bile ducts greatly increase the risk of developing cholangiocarcinoma. Other risk factors that have been studied include long-term infection with hepatitis B or C, scarring of the liver (cirrhosis), and chronic diseases such as irritable bowel syndrome and diabetes. Researchers suspect that certain lifestyle factors, including smoking, alcohol use, and obesity, may also contribute to the risk of developing cholangiocarcinoma.

Studies suggest that a combination of genetic, environmental, and lifestyle factors influence whether a person will develop cholangiocarcinoma. However, most people who develop the disease do not have any of the identified risk factors.

Inheritance Pattern

Cholangiocarcinoma is not inherited. Studies suggest that blood relatives of a person with cholangiocarcinoma may have an increased risk of developing this cancer compared with the general population. However, most people with cholangiocarcinoma do not have a family history of the disease.

Other Names for This Condition

- CC
- cholangiocarcinoma of biliary tract
- cholangiocellular carcinoma
- extrahepatic cholangiocarcinoma
- intrahepatic cholangiocarcinoma

Diagnosis & Management

Genetic Testing

- Genetic Testing Registry: Cholangiocarcinoma, susceptibility to
<https://www.ncbi.nlm.nih.gov/gtr/conditions/C3810156/>

Other Diagnosis and Management Resources

- American Cancer Society: How is Bile Duct Cancer Diagnosed?
<https://www.cancer.org/cancer/bile-duct-cancer/detection-diagnosis-staging/how-diagnosed.html>
- American Cancer Society: How is Bile Duct Cancer Treated?
<https://www.cancer.org/cancer/bile-duct-cancer/treating.html>
- Cancer.Net: Bile Duct Cancer: Diagnosis
<http://www.cancer.net/cancer-types/bile-duct-cancer-cholangiocarcinoma/diagnosis>
- Cancer.Net: Bile Duct Cancer: Treatment Options
<http://www.cancer.net/cancer-types/bile-duct-cancer-cholangiocarcinoma/treatment-options>
- Cholangiocarcinoma Foundation: Staging
<http://cholangiocarcinoma.org/the-disease/staging/>
- Cholangiocarcinoma Foundation: Treatment Options
<http://cholangiocarcinoma.org/the-disease/treatment-options/>
- National Cancer Institute: Bile Duct Cancer Treatment
<https://www.cancer.gov/types/liver/patient/bile-duct-treatment-pdq>

General Information from MedlinePlus

- Diagnostic Tests
<https://medlineplus.gov/diagnostictests.html>
- Drug Therapy
<https://medlineplus.gov/drugtherapy.html>

- Genetic Counseling
<https://medlineplus.gov/geneticcounseling.html>
- Palliative Care
<https://medlineplus.gov/palliativecare.html>
- Surgery and Rehabilitation
<https://medlineplus.gov/surgeryandrehabilitation.html>

Additional Information & Resources

MedlinePlus

- Encyclopedia: Cholangiocarcinoma
<https://medlineplus.gov/ency/article/000291.htm>
- Health Topic: Bile Duct Cancer
<https://medlineplus.gov/bileductcancer.html>

Genetic and Rare Diseases Information Center

- Intrahepatic cholangiocarcinoma
<https://rarediseases.info.nih.gov/diseases/6042/intrahepatic-cholangiocarcinoma>

Additional NIH Resources

- National Cancer Institute
<https://www.cancer.gov/types/liver>
- The Cancer Genome Atlas, National Cancer Institute
<https://cancergenome.nih.gov/cancersselected/Cholangiocarcinoma>

Educational Resources

- American Cancer Society: What is Bile Duct Cancer?
<https://www.cancer.org/cancer/bile-duct-cancer/about/what-is-bile-duct-cancer.html>
- Cancer.Net
<http://www.cancer.net/cancer-types/bile-duct-cancer-cholangiocarcinoma>
- Disease InfoSearch: Intrahepatic cholangiocarcinoma
<http://www.diseaseinfosearch.org/Intrahepatic+cholangiocarcinoma/3854>
- MalaCards: cholangiocarcinoma
<http://www.malacards.org/card/cholangiocarcinoma>
- Orphanet: Cholangiocarcinoma
http://www.orpha.net/consor/cgi-bin/OC_Exp.php?Lng=EN&Expert=70567

Patient Support and Advocacy Resources

- AMMF: The Cholangiocarcinoma Charity (UK)
<http://ammf.org.uk/>
- Cholangiocarcinoma Foundation
<http://cholangiocarcinoma.org/>
- Cholangiocarcinoma Foundation of Thailand
<http://www.cca.in.th/en/>

ClinicalTrials.gov

- ClinicalTrials.gov
<https://clinicaltrials.gov/ct2/results?cond=%22cholangiocarcinoma%22>

Scientific Articles on PubMed

- PubMed
https://www.ncbi.nlm.nih.gov/pubmed?term=%28Cholangiocarcinoma%5BMAJR%5D%29+AND+%28%28gene%5BTI%5D%29+OR+%28mutation*%5BTI%5D%29+OR+%28somatic%5BTI%5D%29+OR+%28genes%5BTI%5D%29+OR+%28genetic%5BTI%5D%29%29+AND+english%5Bla%5D+AND+human%5Bmh%5D+AND+%22last+1800+days%22%5Bdp%5D

OMIM

- CHOLANGIOCARCINOMA, SUSCEPTIBILITY TO
<http://omim.org/entry/615619>

Sources for This Summary

- Banales JM, Cardinale V, Carpino G, Marzioni M, Andersen JB, Invernizzi P, Lind GE, Folseraas T, Forbes SJ, Fouassier L, Geier A, Calvisi DF, Mertens JC, Trauner M, Benedetti A, Maroni L, Vaquero J, Macias RI, Raggi C, Perugorria MJ, Gaudio E, Boberg KM, Marin JJ, Alvaro D. Expert consensus document: Cholangiocarcinoma: current knowledge and future perspectives consensus statement from the European Network for the Study of Cholangiocarcinoma (ENS-CCA). *Nat Rev Gastroenterol Hepatol*. 2016 May;13(5):261-80. doi: 10.1038/nrgastro.2016.51. Epub 2016 Apr 20. *Citation on PubMed:* <https://www.ncbi.nlm.nih.gov/pubmed/27095655>
- Bergquist A, von Seth E. Epidemiology of cholangiocarcinoma. *Best Pract Res Clin Gastroenterol*. 2015 Apr;29(2):221-32. doi: 10.1016/j.bpg.2015.02.003. Epub 2015 Feb 16. Review. *Citation on PubMed:* <https://www.ncbi.nlm.nih.gov/pubmed/25966423>
- Kongpetch S, Jusakul A, Ong CK, Lim WK, Rozen SG, Tan P, Teh BT. Pathogenesis of cholangiocarcinoma: From genetics to signalling pathways. *Best Pract Res Clin Gastroenterol*. 2015 Apr;29(2):233-44. doi: 10.1016/j.bpg.2015.02.002. Epub 2015 Feb 17. Review. *Citation on PubMed:* <https://www.ncbi.nlm.nih.gov/pubmed/25966424>

- Maroni L, Pierantonelli I, Banales JM, Benedetti A, Marzioni M. The significance of genetics for cholangiocarcinoma development. *Ann Transl Med*. 2013 Oct;1(3):28. doi: 10.3978/j.issn.2305-5839.2012.10.04. Review.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/25332972>
Free article on PubMed Central: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200671/>
- Plentz RR, Malek NP. Clinical presentation, risk factors and staging systems of cholangiocarcinoma. *Best Pract Res Clin Gastroenterol*. 2015 Apr;29(2):245-52. doi: 10.1016/j.bpg.2015.02.001. Epub 2015 Feb 14. Review.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/25966425>
- Razumilava N, Gores GJ. Cholangiocarcinoma. *Lancet*. 2014 Jun 21;383(9935):2168-79. doi: 10.1016/S0140-6736(13)61903-0. Epub 2014 Feb 26. Review.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/24581682>
Free article on PubMed Central: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4069226/>

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